GREEN BUILDING QUARTERLY

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Rosendin Electric Creates 'Green Team' to Encourage In-House Sustainability

By Robert Carlsen

Being a sustainable company for 20 years is quite a feat, but Rosendin Electric, one of the nation's largest subcontractors, is now being lauded for its green on-site project expertise and its expansion into the wind farm market.

The San Jose-based, employee-owned company, with offices in San Francisco, Sacramento, Santa Fe Springs, Las Vegas, Tempe, Albuquerque and Hillsboro (Ore.), is attracting the interest of general contractors that are looking for subs with green building and sustainable experience.

Rosendin has recently been part of a number of high-profile green projects, including the California Academy of Sciences and Federal Building in San Francisco, the Alameda County Juvenile Justice Center (which just received a LEED Gold designation), San Jose Civic Center/City Hall, Presentation Center in Los Gatos and the Capitol East End Complex in Sacramento.

Spearheading an inhouse move to graduate more of its employees to LEED Accredited Professionals, estimator >>

Rosendin's Diane Armirol (second from left), lighting foreman, and Kenneth Kaplan (right), senior project manager, welcome San Francisco Mayor Gavin Newsom (left) and Senator Hillary Clinton on a tour of the ultra-green California Academy of Sciences project, in which Rosendin was a major subcontractor.

Top photo: The High Winds Wind Project in Rio Vista is a Rosendin revenue generator.

Erica Paul is corporate chair and trainer of the company's Green Team, which is a voluntary program with monthly meetings in-house and throughout the community. The group recently participated in a Ride + Drive event that introduced the San Jose community to hybrid vehicles. She is also heading up the company's first in-house quarterly green building newsletter – which will be totally electronic, no paper.

As to LEED training, Paul says the company had six LEED-AP employees, but had recently finished training 30 more.

Paul, CSI, LEED-AP, a graduate of Santa Clara University, earned a BS in Finance with minors in Communications and Retail Management Studies. She's an active member of the local U.S. Green Building Council chapter, a board member of CSI, a member of CREW, and a trainer for the LEED-AP Prep Class with the USGBC-NorCal chapter and AIA-SF.

She also teaches an adult evening professional development program class on the fundamentals of LEED at San Jose State University.

"Rosendin is also involved in Santa Clara County's Certified Green Business Provider program, which incorporates Savings by Design and encourages green products and recycling," Paul says.

"Erica is very passionate about green," says Larry Hollis, vice president of business development at Rosendin. "She has some good ideas plus she's getting a lot of the younger employees involved."

Meanwhile, about four years ago, the firm ventured into the wind farm market and is now seeing a huge boom in business. Its first effort, the High Winds Wind Project in Rio Vista, was an $11 million design-build, fast-track project that included a 160 MVA substation, 33 mi of trench for the 34.5 kV collection system, and wiring WTG electrical for 90 Vestas V-80 1.8 MW turbines.

The wind farm business has grown from about $10 million during Rosendin's first year to about $100 million this year, says Hollis. <<

LPA Designs Green Center at Pasadena's JPL

By Robert Carlsen

Constructing a cost-effective, high-performance building these days takes technical know-how, efficient and affordable green products and imaginative design. And having the federal government as the owner of the project adds in all sorts of other challenges.

When the new Flight Projects Center was first thought about at NASA's Jet Propulsion Laboratory in Pasadena seven years ago, LEED achievement was not a federal mandate for New Construction, but three years later it was. Irvine-based LPA Inc. was already at work on the design of the seven-story (six stories and a basement floor), 195,000-sq-ft building project when LEED was brought into the fold. Add to that the 2005 introduction of new state Title 24 energy requirements.

"We had to take these new requirements and work them into the design," says Dan Heinfeld, AIA, LEED-AP, president of LPA. "Luckily, we had a lot of experience in green building, so it was a smooth adjustment."

The center includes an auditorium, fitness center and 20 project suites that feature workstations, private offices, break areas, copy and conference rooms.

"The intent of the design was a focus on universal floors and flexible space," says Heinfeld. "The reason for that is so the JPL could move teams around for projects."

Groundbreaking took place in May. The general contractor on the project is Swinerton Builders.

Sustainable features include a cost-saving HVAC underfloor displacement ventilation system at the auditorium that delivers conditioned air just above floor level; fixtures that promote water conservation, including waterless urinals, dual valve water closets, and low-flow faucets and showerheads; EnergyStar rated appliances; and strategically placed rooftop plants and ground coverings that help to reduce noise, HVAC usage and the heat island effect.

"We also worked in a more efficient skin and siting to take advantage of daylighting," Heinfeld adds.

The Flight Projects Center is the first green building at the JPL and second at NASA.

The Jet Propulsion Laboratory, a division of the California Institute of Technology, is NASA's lead center for robotic exploration of the solar system, and has active programs in Mars exploration, astronomy and physics, and Earth sciences.

JPL is a NASA center staffed and managed for the government by a leading private university, Caltech. It was established by the California Institute of Technology in the 1930s. America's first satellite, Explorer 1, was created at JPL. In the decades that followed, the lab sent the first robotic craft to the moon and out across the solar system.

"We hope the Flight Projects Center will serve as a model for future JPL campus developments and also educate users and visitors about practical sustainable building design," says Heinfeld.

The veteran architect adds that good design "is about solving problems, not chasing fashion."

LPA's principal-in-charge of the project is Steve Kendrick, with Rick D'Amato serving as design principal and Patrick McClintock as the interior designer. Lee George Structural Engineers and Stantec serve as the structural and civil engineers, respectively. <<

Green Products Rack Up LEED Points

kama-eebs panels
kama Energy Efficient Building Systems
Las Vegas
(702) 451-7155, www.kama-eebs.com.

kama Energy Efficient Building Systems provide a 100% recyclable building product that is highly energy efficient, structural, has absolutely no thermal bridge, no sound bridge, and can be used to construct any design, including multi-levels and curved walls.

Buildings constructed with kama-eebs panels are 60% more energy efficient than those built with traditional wood or metal stud framing, and can reduce by a third a building's heating and air conditioning capacity.

The panels are resistant to all natural disasters, fire, mold, mildew, moisture; are non toxic-no off gassing; will not rust or warp; are insect repellant; are 2.5 times stronger than wood; and are fast and easy to install.

Built to design specifications, the panels can be used as a structural wall, floor or roof.

Under the LEED-NC category, kama-eebs panels can assist building teams in obtaining a maximum of 23 LEED points, as long as the overall design meets or exceeds the LEED building performance standards.

kama-eebs panels can also potentially assist in gaining points in other LEED Green Building Rating Systems, including LEED for Existing Buildings, LEED Core and Shell, LEED for Homes, LEED for Neighborhood, as well as others still under development, such as LEED for Schools, LEED for New Retail Construction, and LEED for Healthcare.

kama-eebs panels are HCFC-free and CFC-free expanded polystyrene foam that is R-4 per in. A building envelope with kama-eebs panels comply with ASHRAE/IESNA 90.1-2004 and California's Title 24-2005, as well as most international, national, and local energy codes. kama-eebs panels are structural yet free of any thermal bridging – not even a screw - because the structural steel studs are imbedded in the EPS foam, providing maximum thermal performance within the building envelope.

Kawneer Aluminum Products
Kawneer Co.
Norcross, GA
www.kawneer.com
Kawneer Co., a manufacturer of architectural aluminum building products and systems for commercial construction, has introduced a LEED Planning Tool. Developed to help architects navigate the complex LEED certification process, the tool guides users to the specific Kawneer products and solutions that meet the requirements for each targeted LEED category.

Designed as a "working" instrument, Kawneer's new LEED Planning Tool is ideal for use in the design development stage. Not only does it tie specific strategies to specific products, the tool also features sections for "Potential Points" and "Earned Points" based on the recommended products/principles for each LEED category. This function allows users to estimate the amount of points their projects can earn and track their progress toward certification.

A wide range of Kawneer architectural aluminum products were used in building a new green headquarters building for Little Rock, Ark.-based Heifer International. The organization was faced with the need for larger headquarters, but wanted the project to remain true to the earth's resources. Heifer identified a long-abandoned railroad yard in the city's old warehouse district, an environmentally dirty site, known as a brownfield, and made the decision to transform it – the "green" way.

Polk Stanley Rowland Curzon Porter Architects, Ltd., developed the building's design, capturing every opportunity to achieve LEED points and reflect the overall mission. Glazing contractor ACE Glass Co. Inc. and product manufacturer/design engineering team from Kawneer North America were called in to collaborate on the project. Completed in March 2006, the project was expected to receive its LEED certification this year.

Kawneer products used included 1600 Wall System 1, 1600 SunShade, Inlighten (light shelf), Trifab Framing System, 350 Medium Stile Entrances, 1010 Sliding Mall Fronts, and 990 Sliding Doors.

GreenT Hardwood Plywood
Timber Products Co.
Springfield, Ore.
800-547-9520, www.timberproducts.com
To meet the growing demand for green materials, Timber Products Co., a producer of environmentally sustainable wood-based panels, has introduced its new GreenT line of hardwood plywood that is available with a special no-added-urea formaldehyde resin and several core options produced with recycled wood fibers. To add to its green qualities, GreenT is produced from wood certified under the Sustainable Forestry Initiative.

GreenT's pioneering manufacturing process allows for a cost-

effective resin that is free of urea formaldehyde and mixed and applied in a proprietary process. This breakthrough provides the woodworking industry with a competitively priced hardwood panel that greatly reduces the amount of formaldehyde emissions.

GreenT Hardwood Plywood panels are made with three different core materials and can be produced with a special no-added-urea formaldehyde resin, or other resins that meet specific performance requirements:

GreenT Arreis is a new MDF core product produced with a no added urea formaldehyde adhesive and 100% post-industrial recycled wood fiber. GreenT Arreis hardwood panels provide the same performance as standard MDF core panels.

GreenT Veneer Core has the same physical properties as the company's standard veneer core products.

GreenT Particleboard Core offers the same physical properties as standard particleboard core hardwood panels.

Timber Products says it responsibly stewards 118,000 acres of forest under the strict standards of the Sustainable Forestry Initiative program and was the first hardwood plywood company in the world to carry the SFI label.

All materials sourced from the company's land are audited and certified as environmentally sustainable, ensuring healthy forests for future generations.

Reclaimed Tropical Hardwoods

TerraMai
McCloud, Calif.
800-220-9062, terramai.com

TerraMai's new engineered, prefinished reclaimed teak flooring has the rich color, tight grain, and legendary durability only found in centuries-old teak, along with the added convinces of an engineered product. This flooring can be glued or floated over concrete slabs and is ideal for installations over radiant heat or wherever a sand-and-finish product is problematic.

With a wear layer of vintage, old-growth Asian teak over a substrate made from FSC-certified new wood, the engineered teak combines the best of old-world elegance and new-world technology. <<

Kwan Henmi, Pankow Take LEED in CI Project

The one prominent question about green building is how can the owner see a return on investment? One particular LEED-Commercial Interiors project in San Francisco has it all figured out.

When architectural firm Kwan Henmi decided to move its offices to a downtown office building, it made the decision to go LEED-CI "because it's the right thing to do," says principal Sylvia Kwan.

The building, 456 Montgomery Street, was originally built in 1908 as two adjoining three-story buildings housing the Italian American Bank. In 1983, a 21-story tower was placed atop those buildings.

The third floor of the older, historic section was chosen for Kwan Henmi's office, and Kwan says the space was formerly a furniture showroom with a few offices, but mainly it was pretty wide open.

"With LEED-CI, you have to be thoughtful," she says. "How much do you demolish and how much do you keep, – what you keep is a sustainable practice because there's no construction waste. But you also have to look at the operating efficiencies."

Kwan Henmi opted for minor construction. Pankow Builders of Oakland handled the general contracting duties.

"The first thing we did was get rid of the power-sucking lights," Kwan says. "We replace the old fluorescents with new two-ft long compact fluorescent tubes and that alone got rid of about 80% of the wattage."

The next thing the firm did was deciding not to replace some old acoustical tiles on the 16-ft-tall ceiling.

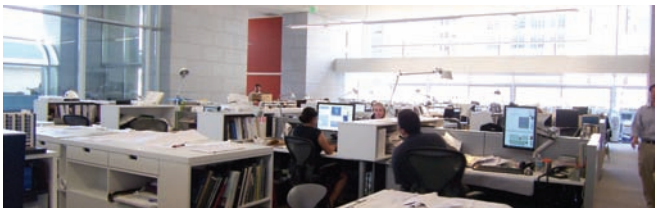
Keeping the floor open was also a priority. Kwan says that all but one of its 42 workstations have light and air (via workable windows).

LEED points were also achieved by being near public transportation options, using low-emitting materials, using 10% recycled content, using 20% of local and regionally-manufactured materials, 20% water use reduction and optimized energy performance.

Kwan, who presented this case study at this summer's PCBC show in San Francisco, says the office project was submitted as a LEED silver, which would have to garner 27-31 points in the CI category. She says the projected LEED elements would add 6% to the cost of the project.

Going LEED will result in tax benefits for new equipment and furniture, PG&E and EnergyStar rebates and will reduce operating costs. In addition, marketingwise, going green also can result in publicity and awards.

So, who is realizing the return on investment of a LEED project? According to Kwan, the landlord gets all financial benefits from investment via energy cost savings, and the landlord and tenant share financial benefits via lease agreements.



Typically, LEED projects, on average, according to the U.S. Green Building Council, have energy savings of 30%, water use savings of 45% and waste cost savings of 75%.

Joining Kwan Henmi and Pankow on the project were Mission Bell (millwork) of Morgan Hill, Res-Com (insulation) of Hayward, Patrick Ruane Drywall of South San Francisco, Golden State Flooring of Concord, Russell Hinton Painting of San Francisco, VCB (acoustical ceiling) of Santa Rosa, ACCO Mechanical of San Leandro, RLH (fire protection) of San Francisco, Kruse Plumbing of Berkeley, and McMillian Electric of San Francisco. <<

Riverside Adopts California Green Builder Program

The city of Riverside recently became the first community in California to provide incentives to builders who utilize the voluntary California Green Builder program as a way to meet the city's "Clean and Green" requirements.

The California Green Builder program was developed by the California Building Industry Association's technical and research affiliate, the Building Industry Institute, to provide a measurable, environmentally friendly, and cost-effective green building program primarily for production home builders.

The Riverside City Council enacted an ordinance officially recognizing the program. The vote was unanimous. Riverside joins a number of other communities, including Palm Springs, Palm Desert and Cathedral City, that have recognized the California Green Builder program as a preferred green homebuilding alternative. In addition, the Imperial Irrigation District provides incentives to builders who utilize the program in its service territory in the Imperial and Coachella valleys.

The program provides a number of environmental benefits:

CGB homes are 15% to 20% more energy-efficient than the state's toughest-in-the nation Title 24 energy efficiency standards.

They save at least 20,000 gallons of water a year compared to a typical house.

The builders divert at least half of their construction waste from landfills, helping local jurisdictions meet their state waste diversion mandates.

Wood used in CGB homes is harvested from sustainable forest operations.

And as climate change becomes a bigger issue, a CGB home results in less than half of the carbon dioxide being produced than would be generated during the lifetime of a typical California home.

In addition, there are often incentives to builders, such as tax and utility rebates and expedited processing, which can save thousands of dollars, the CBIA says.

The city of Riverside has agreed to provide expedited processing to CGB for plan checking and inspections and is the first city in the state to tie incentives directly to CGB homes.

Without incentives or rebates, building to CGB standards could cost homebuyers up to $6,000 per home.

To date, more than 1,100 CGB homes have been built and there are nearly 4,000 more homes in the pipeline, with several other major builders considering joining. More than 1,400 homes have been added to the program so far this year alone.

Homes are currently available in the Sacramento area, Stockton, San Jose, Bakersfield, the Santa Clarita Valley, Victorville, San Diego, and San Luis Obispo. For more information about the program and links to participating builders, visit www.cagreenbuilder.com. <<

Santa Ana School Awarded for High Performance Construction, Design

The Collaborative for High Performance Schools has honored Heroes Elementary School of the Santa Ana Unified School District with a Green Apple award for excellence in high performance school design and construction. Designed by NTD Architecture of Los Angeles as a memorial to the heroes of 9/11, Heroes Elementary features an environment that is healthy, sustainable, secure, and easy to maintain.

"It was our privilege to be given the opportunity to design such a significant new school," says Jay R. Tittle, AIA, partner of NTD. "Not only does it serve as a reminder of a significant historical event, it also works toward improving the future with a variety of sustainable features."

Heroes Elementary exceeds Title 24 standards by nearly 24%. This savings in energy consumption amounts to approximately a 20% reduction in energy costs which frees up about $1,000 annually per classroom for educational uses.

Sustainable features of the new elementary school that contribute to its CHPS designation include daylighting, designated spaces for recyclable materials storage, recycled building materials, a cool roof with reflective coatings, a >>

storm drainage system to minimize run-off, and dual-technology occupancy light sensors that turn lights on and off automatically. Additionally, school facilities will be available to the community and a central location ensures that all students live within one mile of the site.

The new elementary school is constructed of several products made of waste tires, recycled windshield glass, and recycled newsprint, paint, plastic, and glass beverage containers. Additionally, half of the wood used on this project is Forest Stewardship Council-certified. Heroes Elementary is a California High Performance "Demonstration" School and will also serve as a materials showcase.

Construction on Heroes Elementary began in June of 2006 and completed in August 2007. The school sits on a 3.5-acre lot and features 51,643 sq ft of building space. The school is equipped with 29 teaching stations and can accommodate up to 689 students. The total construction cost was $13.2 million. <<

West Hollywood Claims Title of Greenest City in the Country

The city of West Hollywood and Global Green USA have implemented one of the nation's first mandatory green building programs for private development. The city also unveiled its new Green Building Resource Center at the West Hollywood City Hall lobby.

"The city has been a leading force in enacting policies to promote the environment" says West Hollywood Councilmember Abbe Land, who co-sponsored the building program. "Passage of the Green Building Ordinance continues this legacy and represents a truly collaborative effort between the public and private sectors."

The Green Building Resource Center provides a sampling of building materials and practices that increase energy efficiency, indoor air quality and water conservation. The display provides information and outreach to homeowners, renters, businesses and developers to aid in making each project in West Hollywood more sustainable. The Resource Center also provides a manual for the city's Green Building Ordinance to explain each requirement and methods for achieving them.

The Green Building Requirements and Incentives for Private Development Ordinance focus on the following:

- Establishes new development standards that apply to all development, including all new residential and commercial projects as well as remodels and tenant improvements;
- Develops a point system for new construction with incentives for projects that achieve "exemplary" status; and
- Implements green building education and outreach program.

The green development standards are green building requirements for remodels, tenant improvements, additions and new construction. These standards were incorporated into the Zoning Ordinance so that all projects incorporate elements such as drought-tolerant landscaping, low-flow plumbing fixtures, and energy efficient appliances.

The green building point system will be incorporated in all new structures, with incentives for projects that go above and beyond minimum requirements. The requirements are structured as a point system to allow for maximum flexibility and the points allowed each reflect West Hollywood's unique opportunities and constraints. Specifically, the point system was designed to emphasize locally-available materials, encourage green elements to be incorporated early into project design and provide flexibility to alter green elements as the project evolves.

Mandatory Items for all Projects Including Remodels and Additions include:

- Divert 80% of construction and demolition waste away from landfills.
- Label storm drains in the public right-of-way that drain to the ocean.
- Provide a roof layout plan showing how future photovoltaic panels could be installed, and provide a conduit from the roof to electrical panel.
- Provide a construction air quality management plan.
- Interior paints and wood finishes shall be low VOC.
- Install Energy Star appliances in residential construction.
- Conserve water, minimize drainage to the storm drains, and improve water quality by: providing permeable surfaces in front, side and rear yards, installing drought tolerant landscape and water-conserving irrigation systems, installing low flow showerheads, faucets and water closets, and controlling construction debris.
- Provide bicycle parking as required by the code.
- Provide area for recyclable materials storage.
- Install energy efficient outdoor lighting.
- Provide landscaping in new surface parking areas.
- Reduce vehicle trips by complying with the City's Transportation Demand Management programs.
- Comply with the revised energy efficiency standards in Title 24 of the Building Code. <<